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NATIONAL COMMUNICABLE DISEASE CENTER

Morbidity and Mortality

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WEEKLY REPORT

Week Ending April 27, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL

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EPIDEMIOLOGIC NOTES AND REPORTS

FATAL CASE OF MALARIA - Washington, D. C.

On December 4, 1967, a 57-year-old Negro male was admitted to a Washington, D.C. hospital for a laryngectomy because of carcinoma of the larynx. Between December 5 and 19, 1967, the patient received three units of whole blood and one unit of packed cells. His postoperative course was uncomplicated until January 6, 1968, when his temperature spiked to 104°F. and exceeded 103°F. on each of the next 3 days. On January 9, the patient became comatose. A routine blood smear obtained on January 11 revealed a 15 percent parasitemia with *Plasmodium falciparum*. Chloroquine therapy was immediately instituted via naso-gastric tube. The following day, oral pyrimethamine, intravenous quinine, and intramuscular dexamethasone were added to the treatment. On January 12, the patient was found to have hemoglobinuria and an elevated plasma hemoglobin. His hematocrit dropped from 42 on January 7, to 22 on January 12; the BUN remained normal. Because of the hemolysis, the

(Continued on page 150)

CONTENTS

Epidemiologic Notes and Reports
Fatal Case of Malaria – Washington, D.C. 149
Typhoid Fever – Tipton County, Tennessee 150
Rabies in an Air Force Sentry Dog 152
Coccidioidomycosis – New York 152
Surveillance Summary
Tetanus – 1965 and 1966 Part II 152
Current Trends
Measles – United States 154

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	17th WEEK ENDED		MEDIAN	CUMULATIVE, FIRST 17 WEEKS		
	April 27, 1968	April 29, 1967	1963 - 1967	1968	1967	MEDIAN 1963 - 1967
Aseptic meningitis	30	33	20	484	496	464
Brucellosis	8	10	5	46	70	70
Diphtheria	19	—	3	66	35	68
Encephalitis, primary:						
Arthropod-borne & unspecified	24	21	- - -	262	402	- - -
Encephalitis, post-infectious	13	20	- - -	155	263	- - -
Hepatitis, serum	88	31	791	1,264	635	14,085
Hepatitis, infectious	912	760		14,246	13,450	
Malaria	23	42	2	725	661	36
Measles (rubeola)	935	2,412	10,603	11,526	39,771	162,029
Meningococcal infections, total	44	63	65	1,247	1,013	1,135
Civilian	43	60	- - -	1,131	937	- - -
Military	1	3	- - -	116	76	- - -
Mumps	4,251	- - -	- - -	84,727	- - -	- - -
Poliomyelitis, total	—	—	—	14	5	7
Paralytic	—	—	—	14	5	6
Rubella (German measles)	1,901	1,921	- - -	23,173	20,946	- - -
Streptococcal sore throat & scarlet fever	9,050	10,104	10,104	190,203	204,347	185,582
Tetanus	1	1	2	35	52	57
Tularemia	2	3	3	22	44	61
Typhoid fever	3	8	4	78	109	105
Typhus, tick-borne (Rky. Mt. spotted fever)	2	4	1	8	14	8
Rabies in animals	69	96	117	1,270	1,509	1,509

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Rabies in man:	—
Botulism:	—	Rubella, Congenital Syndrome:	3
Leptospirosis: Tenn.- 1	9	Trichinosis: Mass. - 1	18
Plague:	—	Typhus, murine:	3
Psittacosis:	19	Polio, Unsp.:	

FATAL CASE OF MALARIA – *(Continued from front page)*

patient was treated with mannitol, large amounts of parenteral fluid, and transfusions of packed cells. The patient died on January 13 without having regained consciousness. Blood films obtained just prior to his death contained only a few *P. falciparum* parasites. Autopsy findings included pulmonary edema, pigmentation of spleen and liver, and cerebral edema with *P. falciparum* parasites in the cerebral capillaries.

The patient had given no history of malaria, unexplained fever episodes, or travel outside the Washington, D.C. area. The four persons who donated the blood given to the patient prior to January 6, 1968, were identified and their sera examined. Three were U.S. citizens, none of whom had a history of malaria or unexplained fevers. One had never been overseas; one had been in western Europe in 1945-1946; and one had traveled in Central America in 1962. None of the sera of these donors contained fluorescent antibodies against malaria. The fourth donor was a 29-year-old Negro male student from Nigeria. He donated blood on December 7, 1967, which was given to the patient on December 19, 1967. The donor had come to the United States on April 5, 1965, and had not traveled abroad since that time. He denied any history of malaria, unexplained fever episodes, blood transfusions, or use of commonly shared syringes. He had not received antimalarial drugs. His serum contained fluorescent antibodies against malaria, but the Plasmodium species could not be identified. No malaria parasites were found in thick and thin blood smears obtained from this donor in January and March 1968. However, examination of multiple thick and thin blood films, obtained on April 12, 1968, 1 day after he underwent a 500 ml phlebotomy, revealed the presence of very rare *P. falciparum* trophozoites.

(Reported by John R. Pate, M.D., M.P.H., Chief, Communicable Disease Control, and William E. Long, M.D., Chief, Epidemiological Service Division, District of Columbia Department of Public Health; Malaria Surveillance Unit, NCDC, and an EIS Officer.)

Editorial Note

The Nigerian donor was clearly the source of malaria in this case. The absence of a positive history of malaria suggests that the donor may have been infected early in life and developed sufficient immunity to allow asymptomatic parasitemia. The persistence of the *P. falciparum* infection for more than 36 months (from at least April 5, 1965, to April 12, 1968) is unusual. The reciepient developed three complications of falciparum malaria: cerebral involvement with coma, intravascular hemolysis, and pulmonary edema.

TYPHOID FEVER – Tipton County, Tennessee

On September 27, 1967, a 10-year-old male from Tipton County, Tennessee, became ill with fever, nausea, vomiting, and diarrhea. During the next few days, he had fever and four or five yellow, watery stools per day. He was seen by a local physician on October 4, and was hospitalized in Memphis on October 6. Diagnostic studies including febrile agglutinations were begun. On October 9, he had a titer of 1:320 against the O antigen of *Salmonella typhi* and a bone marrow culture that was positive for *S. typhi*. A stool culture taken on October 12 was also positive for *S. typhi;* an earlier stool culture had been negative. The patient was treated with multiple antibiotics including sodium cephalothin, chloramphenicol, and ampicillin. The ampicillin was continued for 10 days after the patient was discharged from the hospital on October 20.

Histories obtained from the patient's family revealed that no recent illness had occurred among the other eight family members and that no raw milk had been consumed by the family. The family also reported that the boy was careless in personal hygiene after playing in a muddy pond located on the boy's farm home. Investigation by public health nurses and the public health sanitarian disclosed that the household waste disposal system consisted of a pit privy; the privy was so dilapidated that it had not been used for several weeks prior to the boy's illness. Human waste was discarded in a shallow hole, which was near a cistern that provided the family water supply. The cistern walls were crumbling and porous, and the sanitarian advised the family not to use the cistern. Typhoid vaccination was made available to the household members.

Stool cultures were made on the eight family members who were not clinically ill. All were negative except for the cultures of the patient's 67-year-old grandmother. Two stool cultures taken from her on October 13 and 26 were positive for *S. typhi*. When she was questioned about her illnesses, she answered that she had had "the fever" about 40 or 50 years ago. She gave no history of other significant gastrointestinal illnesses. It was decided to attempt eradication of the carrier state in the grandmother. On November 21, she was started on 500 mg capsules of ampicillin, three capsules four times per day and 500 mg probenecid tablets, one tablet four times per day. She responded well to the large oral antibiotic dosage. A stool culture taken on January 19, 1968, 10 days after she had completed a 6-week course of drugs, was negative for enteric pathogens. Subsequent cultures taken on January 26 and February 19 were also negative. Between November 17, 1967, and January 29, 1968, five consecutive stool cultures from the boy who had been clinically ill were also negative. Both the boy and the grandmother are well at the present time.

(Reported by B. D. Hale, M.D., Director, Hardeman-Haywood-Tipton County Health Department; and Cecil B.

Tucker, M.D., Director, Division of Preventable Diseases, Tennessee Department of Public Health.)

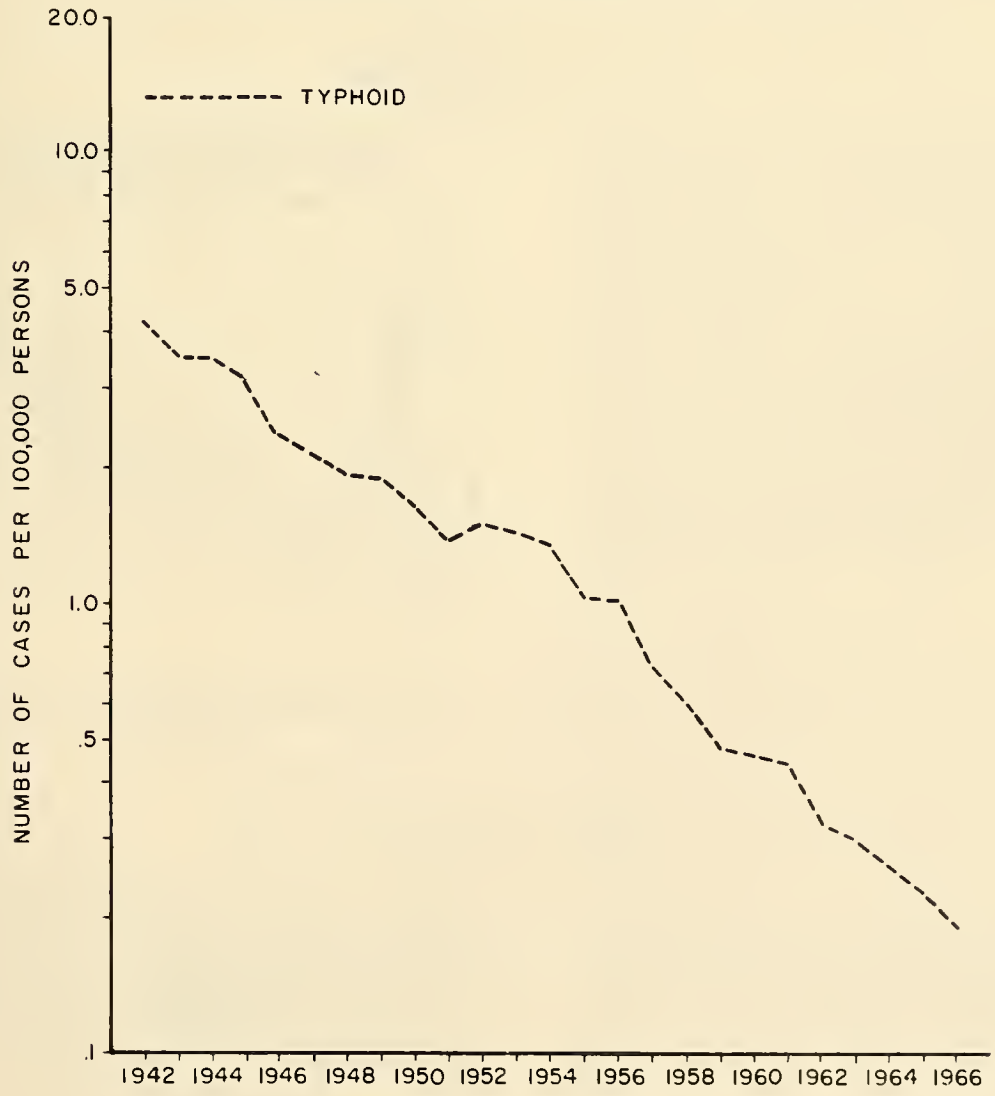
Editoriol Comment

The reported incidence of typhoid fever has declined steadily in the United States since 1942 (Figure 1). For the 5-year period 1963-1967, an average of 694 isolations of *S. typhi* have been reported annually, of which at least one-third are isolations from previously identified typhoid carriers. Although outbreaks of typhoid fever still occur, most cases in the United States are now sporadic incidents due to contact with an asymptomatic carrier. Improvement in the general level of sanitation in the population has probably been the most significant factor in the decline in incidence and change in pattern of spread of typhoid. However, other factors which may have contributed to this decrease include improved surveillance and detection of cases and carriers, use of typhoid vaccine among exposed individuals, and effective antibiotic therapy to eliminate the carrier state. In 1966, Simon and Miller reported the use of oral ampicillin to treat long term typhoid carriers. By treating patients with oral doses of 50 to 100 mg of ampicillin per kg body weight for 28 days, they were able to eliminate the carrier state in 13 of 15 patients including 10 of 11 with gallbladder disease.

REFERENCE

Simon, H. J. and Miller, R. G.: Ampicillin and the treatment of chronic typhoid carriers: Report on 15 treated cases and a review of the literature. New Eng J Med *274*:807-15, 1966.

Figure 1
REPORTED INCIDENCE OF TYPHOID FEVER UNITED STATES, 1942–1966



RABIES IN AN AIR FORCE SENTRY DOG

On February 22, 1968, a 20-month-old German shepherd being trained at Lncklnnd Air Force Base, Texas, as a sentry dog, bit his handler. The following day the dog was found dead; necropsy revealed traumatic injury to the neck with resulting internal hemorrhage. Presumably, the injury was inflicted during efforts to regain control of the dog nfter the biting incident.

The dog's head was sent to the USAF Epidemiological Laboratory for routine examination for rabies. The direct fluorescent rabies nntibody (FRA) test was positive, showing aggregates of fluorescent material in cells which suggested Negri bodies. Three-week-old mice inoculated intracerebrally with a 20 percent suspension of the brain material died in 9 days with symptoms typical of rabies; their brains were FRA positive. Material from this mouse passage was also lethal for mice, but incubation with antirabies serum of equine origin neutralized the virus.

The dog had been vaccinated with chicken embryo origin rabies vaccine on March 16, 1967, May 29, 1967, and Jnnunry 9, 1968. No blood was available for neutralization tests to determine whether the dog had developed antibody. The dog hnd been at the Air Force base since May 10, 1967, and since that time there had been no known exposure to rabies. A veterinarian in Tennessee who examined the dog on May 3, 1967, prior to its shipment to Texas noted that the dog had no previous injuries except for a "few fight wounds." The dates of the wounds and the animals involved were not known. Rabies in wild animals has been reported in both Texas and Tennessee.

Following the diagnosis of rabies in the dog, the handler received a 21-day course of duck embryo vaccine. He has remained asymptomatic.

(Reported by Cyril J. Hodapp, Lt. Col., USAF, BSC, Chief, Virology Branch, USAF Epidemiological Laboratory (AFSC), Lackland Air Force Base, Texas.)

SURVEILLANCE SUMMARY
TETANUS – 1965 and 1966 PART II

In 1965 and 1966 the median age of tetanus patients in the United States reported to NCDC, excluding neonates, was 48 years. The average annual age-specific incidence and mortality rates for tetanus are shown in Figure 1. Peak incidence occurred among the very young and the elderly. Case fatality ratios were also maximal at the extremes of age. Persons between the ages of 10 and 20 years had the lowest incidence and mortality rates. When neonatal cases were excluded, the case fatality ratio for patients less than 50 years of age was 55.4 percent as compared with 76.4 percent for the age group above 50 years. The neonatal case fatality ratio was 77 percent.

The marked increase in both the incidence and case fatality ratios in adults above the age of 50 years may result from this age group's not having had the benefit of immunization in childhood and in the armed forces during WWII.

The neonatal group accounted for 10 percent of national tetanus morbidity. Of the 54 neonatal cases reported, 27 occurred among males and 27 among females. Thirty-nine cases were fatal, 13 recovered, and in two cases the outcome were unknown. The racial composition of this group was 34 percent white and 66 percent non-white. The non-white group had significantly higher morbidity and mortality rates. The national incidence rate was 1.34 cases per 100,000 live births, but the incidence was 0.53 per 100,000 non-white births, a tenfold difference. The mortality rate for non-whites was 0.96 deaths per 100,000 live births. Neonatal tetanus mortality rates in whites and non-whites have declined more than threefold since 1950-1959 (3.48 deaths to 0.96 deaths per 100,000). Only six of the neonatal tetanus patients were born in a hospital, and a physician was in attendnnce during five of these six deliveries. More than 86 percent of the births thnt were complicated by neonntal tetanus occurred at home, and a mid-wife or non-medical person provided the obstetrical care. The umbilicus was the source of infections in all cases where a site was identified.

Figure 2
TETANUS MORBIDITY AND MORTALITY
AVERAGE ANNUAL RATES BY AGE GROUPS
UNITED STATES, 1965–1966

(Reported by Special Pathogens Unit, Bacterial Disease Section, and Statistics Section, Epidemiology Program, NCDC.)

EPIDEMIOLOGIC NOTES AND REPORTS
COCCIDIOIDOMYCOSIS – New York

On November 8, 1967, a 44-year-old machinery salesman, while attending an equipment demonstration in central Arizona, drove one of the demonstration machines outdoors. Clouds of dust were raised by the machine. On November 20, 2 days after the salesman returned to his home in New York, he developed a headache and epigastric distress, and subsequently because of these complaints, he spent 4 days in bed. On November 30, he entered a New York hospital for evaluation of these symptoms. Physical examination revealed a temperature of 102°F. and a few crepitant rales in the left paravertebral area. A chest X-ray was taken that showed extensive bronchopneumonia on the left. Because of a non-productive cough, his illness was diagnosed as probable mycoplasma pneumonia, and he was treated with tetracyclines. Despite this treatment the patient remained symptomatic.

Further questioning revealed the patient's trip to Arizona, suggesting coccidioidomycosis as a possible cause for cough and pneumonia. A gastric aspiration was performed, and the aspirate cultured. The specimen grew *Coccidioides immitis*. Tuberculin and histoplasmosis skin tests were negative, but a 1:100 coccidiodin skin test revealed induration of 1 cm after 48 hours. No specific treatment was given. A chest X-ray taken on December 20 showed minimal clearing of the bronchopneumonia. The patient became afebrile, free of headache and cough, and was discharged on December 16 with the diagnosis of pulmonary coccidioidomycosis.

At home the patient experienced intermittent severe headaches, and with recrudescence of fever and increased severity of headache, the patient was re-admitted to the hospital on January 5, 1968. Chest X-ray revealed further resolution, but with persisting left-sided mediastinal lymphadenopathy. Skull X-rays were normal; however, examination of the cerebral spinal fluid (CSF) showed 10,800 white blood cells per mm^3. No differential was performed and culture of the spinal fluid was reported as negative. The patient was then transferred to another hospital for further evaluation. On admission the physical examination was unremarkable except for very modest neck stiffness which could not be subsequently documented.

On January 8, lumbar puncture was performed revealing lymphocytic pleocytosis and elevated protein. Multiple stains revealed no pathogen. Because of further rise in CSF cell count and even though blood, urine, stool, and sputum cultures were negative for fungi, the patient was started on Amphotericin B therapy intravenously. Serum collected on December 5, 1967, showed no demonstrable coccidioidomycosis complement fixing (CF) antibodies; however, sera collected on January 9, 1968, showed a CF titer of 1:8.

Because the convention in Arizona was attended by approximately 550 salesmen and dealers who were exposed to dust and who might have contracted the disease, an investigation of the people attending the convention was made. It was found that these persons came from 46 states and eight Canadian provinces. Denver, Colorado, and Racine, Wisconsin, were the only cities in which 10 or more salesmen and dealers lived. The 31 employees of the company in Racine who had attended the convention were bled for CF antibodies, skin tested, and X-rayed for pulmonary disease. Most of these employees had been present for the full 2 weeks of the convention in contrast to the majority of other people attending who were present for 1 week or less. All 31 persons had negative skin tests and complement fixation tests for coccidioidomycosis. No active lesions were found in any of the chest X-rays. In view of the findings, further investigation was not felt to be warranted at this time.

(Reported by Susan J. Standfast, M.D., M.P.H., Assistant Professor, Department of Community Health, and D. K. Vedder, M.D., Instructor, Department of Medicine, Division of Infectious Diseases, The Albany Medical College of Union University, Albany, New York; D. H. Grant Skinner, M.D., Chief, Communicable Diseases Section, Wisconsin Division of Health; and the Mycoses Section, Ecological Investigations Program, NCDC, Kansas City, and EIS Officers.)

CURRENT TRENDS
MEASLES – United States

For the week ending April 27, 1968 (week 17), 935 cases of measles were reported to NCDC. The number of cases reported in the 4-week period ending April 20 shows a slight increase in reported cases over the preceding 4-weeks (Figure 1 and Table 1).

During the first 16 weeks of 1968, 10,591 cases of measles were reported. This is 28 percent and 9 percent of the cases reported for the comparable periods in 1967 and 1966, respectively. The number of cases by division

(Continued on page 154)

MEASLES – *(Continued from page 153)*

and state per 4-week period for the 16 weeks is shown in Table 1. Although there is considerable variation in the number of cases reported from week to week, four divisions (Middle Atlantic, South Atlantic, East South Central, and West South Central) showed an increase in reported cases during each 4-week period. In four of the other five divisions, the increases occurred during the first 12 weeks, but the 4-week period ending April 20 showed a decrease in reported cases from the preceding 4-week total.

Also shown in Table 1 is the 16 weeks total for 1968 and the totals for comparable periods in 1966 and 1967 with the decrease or increase in 1968 from these years. The New England and Middle Atlantic divisions show an increase in cases reported in 1968 from the cases reported during this period in 1967. Massachusetts, Connecticut, New York City and Upstate, New York, account for the increases in these divisions. All the other seven divisions showed significant decreases from 1967; however, four states (Indiana, Illinois, Kansas, and Wyoming) in these seven divisions showed an increase. In 38 of the 50 states the difference in the cases reported in 1967 and 1968 was greater than the number of cases reported in each state in 1968.

(Reported by State Services Section, and Statistics Section, Epidemiology Program, NCDC.)

Figure 3
REPORTED MEASLES BY FOUR-WEEK PERIODS – UNITED STATES
EPIDEMIOLOGIC YEAR, 1967–68 COMPARED WITH 1964–65, 1965–66, AND 1966–67

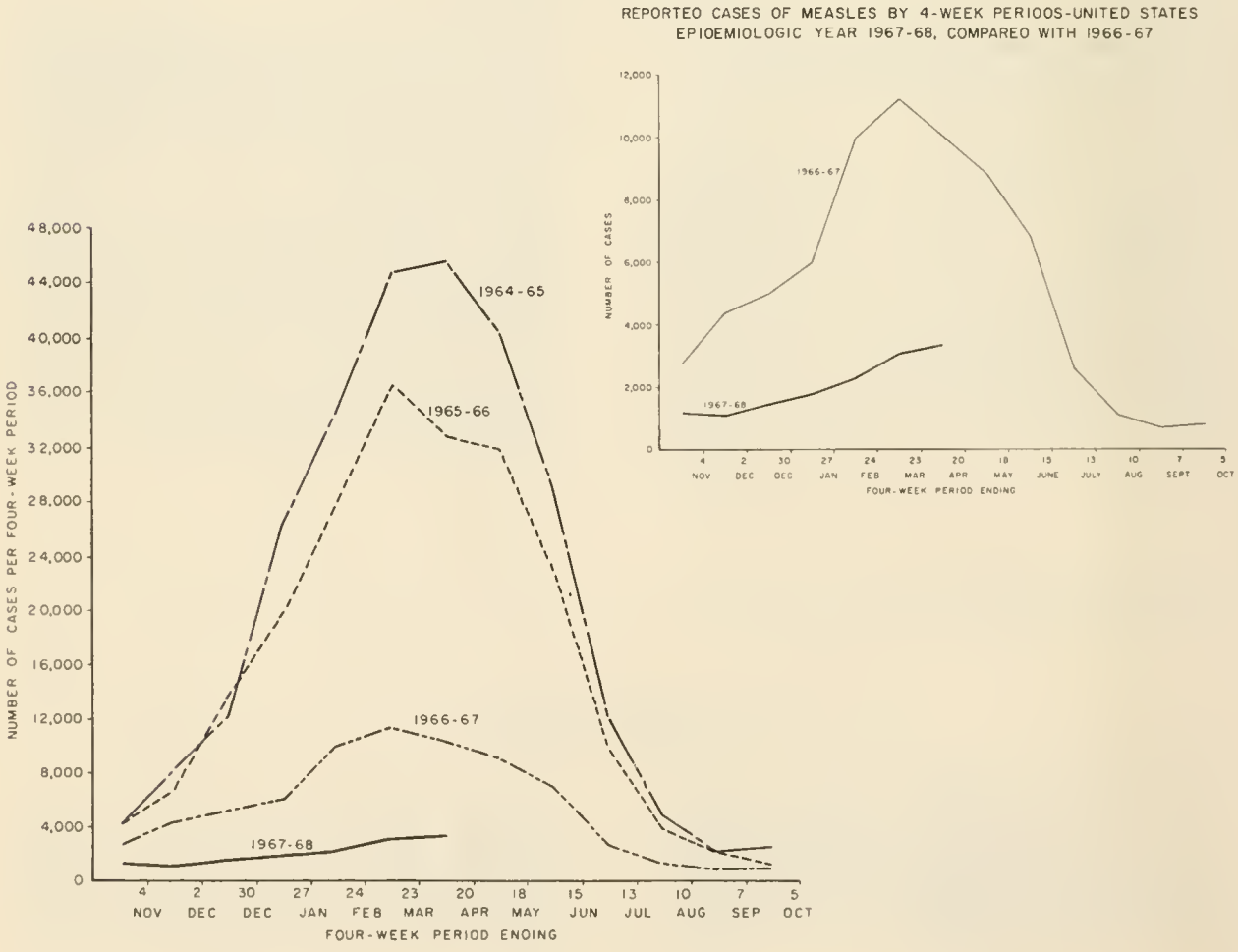


Table I
Reported Cases of Measles, by Geographic Division, United States,
First 16 Weeks 1968 and Comparable Periods, 1966 and 1967

DIVISION	Number Cases Per Four-Week Period Ended*				Total 16 Weeks Dec. 31 1967 through Apr. 20 1968	Comparable 16 Weeks Total		1968 Decrease (Increase) From	
	Jan. 27 1968	Feb. 24 1968	Mar. 23 1968	Apr. 20 1968		1967	1966	1967	1966
UNITED STATES	**1,811**	**2,376**	**3,058**	**3,346**	**10,591**	**37,359**	**117,898**	**26,768**	**107,307**
NEW ENGLAND	**61**	**123**	**159**	**131**	**474**	**408**	**1,403**	**(66)**	**929**
Maine	7	1	2	3	13	88	157	75	144
New Hampshire	3	26	18	9	56	69	26	13	(30)
Vermont	—	—	—	1	1	21	204	20	203
Massachusetts	27	69	80	42	218	159	538	(59)	320
Rhode Island	1	—	—	—	1	27	61	26	60
Connecticut	23	27	59	76	185	44	417	(141)	232
MIDDLE ATLANTIC	**208**	**269**	**487**	**606**	**1,570**	**1,209**	**13,880**	**(361)**	**12,310**
New York City	32	59	97	262	450	200	6,948	(250)	6,498
New York, Upstate	131	118	290	215	754	286	1,565	(468)	811
New Jersey	34	58	78	100	270	287	1,450	17	1,180
Pennsylvania	11	34	22	29	96	436	3,917	340	3,821
EAST NORTH CENTRAL	**561**	**567**	**642**	**576**	**2,346**	**2,908**	**44,080**	**562**	**41,734**
Ohio	69	29	29	62	189	490	3,750	301	3,561
Indiana	88	78	115	91	372	341	2,773	(31)	2,401
Illinois	258	257	248	200	963	461	8,804	(502)	7,841
Michigan	31	39	41	35	146	607	7,188	461	7,042
Wisconsin	115	164	209	188	676	1,009	21,565	333	20,889
WEST NORTH CENTRAL	**44**	**47**	**83**	**53**	**227**	**1,670**	**5,505**	**1,443**	**5,278**
Minnesota	—	2	4	1	7	84	1,337	77	1,330
Iowa	15	7	2	17	41	388	3,005	347	2,964
Missouri	3	3	52	5	63	117	371	54	308
North Dakota	16	25	14	22	77	626	745	549	668
South Dakota	3	—	—	1	4	42	3	38	(1)
Nebraska	4	6	11	6	27	413	44	386	17
Kansas	3	4	—	1	8	—	—	(8)	(8)
SOUTH ATLANTIC	**143**	**181**	**226**	**334**	**884**	**4,285**	**9,082**	**3,401**	**8,198**
Delaware	—	—	5	2	7	27	120	20	113
Maryland	12	16	11	12	51	75	1,375	24	1,324
District of Columbia	2	2	—	2	6	11	307	5	301
Virginia	19	39	66	37	161	1,346	956	1,185	795
West Virginia	47	32	45	25	149	748	3,485	599	3,336
North Carolina	3	34	22	161	220	728	150	508	(70)
South Carolina	4	9	3	2	18	278	426	260	408
Georgia	2	—	1	—	3	23	177	20	174
Florida	54	49	73	93	269	1,049	2,086	780	1,817
EAST SOUTH CENTRAL	**39**	**61**	**79**	**135**	**314**	**3,754**	**13,296**	**3,440**	**12,982**
Kentucky	8	39	7	44	98	1,026	3,902	928	3,804
Tennessee	15	—	23	7	45	1,263	7,511	1,218	7,466
Alabama	8	11	23	30	72	884	1,229	812	1,157
Mississippi	8	11	26	54	99	581	654	482	555
WEST SOUTH CENTRAL	**365**	**594**	**819**	**977**	**2,755**	**13,157**	**13,790**	**10,402**	**11,035**
Arkansas	—	—	—	—	—	1,323	425	1,323	425
Louisiana	1	—	—	—	1	85	68	84	67
Oklahoma	42	1	39	18	100	3,232	312	3,132	212
Texas	322	593	780	959	2,654	8,517	12,985	5,863	10,331
MOUNTAIN	**72**	**105**	**172**	**142**	**491**	**2,713**	**6,548**	**2,222**	**6,057**
Montana	2	7	53	1	63	184	990	121	927
Idaho	6	1	3	1	11	295	655	284	644
Wyoming	17	9	7	9	42	20	89	(22)	47
Colorado	26	45	52	88	211	703	680	492	469
New Mexico	7	16	13	12	48	414	465	366	417
Arizona	14	24	43	27	108	628	3,452	520	3,344
Utah	—	1	1	1	3	234	193	231	190
Nevada	—	2	—	3	5	235	24	230	19
PACIFIC	**318**	**429**	**391**	**392**	**1,530**	**7,255**	**10,314**	**5,725**	**8,784**
Washington	87	118	100	76	381	3,516	1,852	3,135	1,471
Oregon	76	87	75	83	321	916	795	595	474
California	141	218	215	226	800	2,650	7,539	1,850	6,739
Alaska	—	—	—	—	—	96	58	96	58
Hawaii	14	6	1	7	28	77	70	49	42
Puerto Rico	15	40	73	81	209	1,249	1,485	1,040	1,276

*Includes revisions through April 27, 1968

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

APRIL 27, 1968 AND APRIL 29, 1967 (17th WEEK)

AREA	ASEPTIC MENINGITIS		BRUCELLOSIS	DIPHTHERIA	ENCEPHALITIS			HEPATITIS			MALARIA
					Primary including unsp. cases		Post-Infectious	Serum	Infectious		
	1968	1967	1968	1968	1968	1967	1968	1968	1968	1967	1968
UNITED STATES...	30	33	8	19	24	21	13	88	912	760	23
NEW ENGLAND.....	-	-	-	-	2	2	-	3	34	32	5
Maine.....	-	-	-	-	-	-	-	-	3	2	1
New Hampshire.....	-	-	-	-	-	-	-	1	1	-	-
Vermont.....	-	-	-	-	-	-	-	-	1	-	-
Massachusetts.....	-	-	-	-	2	1	-	-	19	12	3
Rhode Island.....	-	-	-	-	-	-	-	-	2	3	-
Connecticut.....	-	-	-	-	-	1	-	2	8	15	1
MIDDLE ATLANTIC.....	5	4	-	-	7	5	-	27	138	144	2
New York City.....	1	1	-	-	1	3	-	17	50	36	1
New York, up-State.	-	-	-	-	1	-	-	2	22	45	-
New Jersey.....	2	3	-	-	2	-	-	4	22	21	1
Pennsylvania.....	2	-	-	-	3	2	-	4	44	42	-
EAST NORTH CENTRAL...	1	7	1	-	1	8	5	3	144	118	3
Ohio.....	-	1	-	-	1	2	3	1	38	26	-
Indiana.....	-	3	-	-	-	3	-	-	6	27	-
Illinois.....	1	3	-	-	-	1	2	1	49	39	-
Michigan.....	-	-	-	-	-	2	-	1	39	21	3
Wisconsin.....	-	-	1	-	-	-	-	-	12	5	-
WEST NORTH CENTRAL...	1	-	2	-	4	1	1	-	80	55	-
Minnesota.....	1	-	1	-	-	-	-	-	22	5	-
Iowa.....	-	-	-	-	-	-	1	-	17	9	-
Missouri.....	-	-	-	-	-	-	-	-	32	35	-
North Dakota.....	-	-	-	-	-	-	-	-	-	2	-
South Dakota.....	-	-	-	-	-	-	-	-	-	-	-
Nebraska.....	-	-	-	-	-	-	-	-	-	1	-
Kansas.....	-	-	1	-	4	1	-	-	9	3	-
SOUTH ATLANTIC.....	4	1	5	4	5	4	-	3	97	64	2
Delaware.....	-	-	-	-	-	-	-	-	1	3	-
Maryland.....	-	-	-	-	2	-	-	-	11	10	-
Dist. of Columbia..	-	-	-	-	-	-	-	-	1	1	-
Virginia.....	1	-	5	-	1	-	-	-	20	23	-
West Virginia.....	-	1	-	-	-	-	-	-	7	7	-
North Carolina.....	-	-	-	-	-	3	-	-	13	4	-
South Carolina.....	-	-	-	4	-	-	-	-	1	-	-
Georgia.....	-	-	-	-	-	-	-	-	11	9	2
Florida.....	3	-	-	-	2	1	-	3	32	7	-
EAST SOUTH CENTRAL...	1	5	-	2	-	-	2	-	41	49	1
Kentucky.....	1	-	-	-	-	-	-	-	14	18	-
Tennessee.....	-	3	-	-	-	-	2	-	15	15	-
Alabama.....	-	2	-	-	-	-	-	-	5	9	-
Mississippi.....	-	-	-	2	-	-	-	-	7	7	1
WEST SOUTH CENTRAL...	7	1	-	13	2	1	1	1	75	99	-
Arkansas.....	-	-	-	-	-	-	-	-	7	5	-
Louisiana.....	1	1	-	-	2	-	1	1	11	9	-
Oklahoma.....	-	-	-	-	-	1	-	-	5	5	-
Texas.....	6	-	-	13	-	-	-	-	52	80	-
MOUNTAIN.....	-	-	-	-	-	-	-	-	48	42	4
Montana.....	-	-	-	-	-	-	-	-	7	5	1
Idaho.....	-	-	-	-	-	-	-	-	1	4	-
Wyoming.....	-	-	-	-	-	-	-	-	2	3	-
Colorado.....	-	-	-	-	-	-	-	-	19	3	2
New Mexico.....	-	-	-	-	-	-	-	-	2	14	-
Arizona.....	-	-	-	-	-	-	-	-	5	11	-
Utah.....	-	-	-	-	-	-	-	-	11	2	1
Nevada.....	-	-	-	-	-	-	-	-	1	-	-
PACIFIC.....	11	15	-	-	3	-	4	51	255	157	6
Washington.....	3	1	-	-	1	-	-	-	24	15	1
Oregon.....	2	-	-	-	-	-	2	1	16	18	1
California.....	5	12	-	-	2	-	2	50	215	124	-
Alaska.....	-	-	-	-	-	-	-	-	-	-	-
Hawaii.....	1	2	-	-	-	-	-	-	-	-	4
Puerto Rico.....	-	-	-	-	-	-	-	1	24	30	-

*Delayed reports: Hepatitis, infectious: Me. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

APRIL 27, 1968 AND APRIL 29, 1967 (17th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINCOCOCCAL INFECTIONS, TOTAL			MUMPS	POLIOMYELITIS			RUBELLA
		Cumulative			Cumulative			Total	Paralytic		
	1968	1968	1967	1968	1968	1967	1968	1968	1968	Cum. 1968	1968
UNITED STATES...	935	11,526	39,771	44	1,247	1,013	4,251	-	-	14	1,901
NEW ENGLAND.....	36	510	471	4	64	42	337	-	-	-	305
Maine.*.....	-	13	121	-	4	2	17	-	-	-	21
New Hampshire.....	1	57	69	-	6	2	5	-	-	-	1
Vermont.....	-	1	22	-	1	-	20	-	-	-	-
Massachusetts.....	17	235	179	-	28	19	159	-	-	-	87
Rhode Island.....	-	1	27	1	5	1	42	-	-	-	86
Connecticut.....	18	203	53	3	20	18	94	-	-	-	110
MIDDLE ATLANTIC.....	194	1,764	1,298	15	208	150	165	-	-	-	208
New York City.....	78	528	226	4	39	24	119	-	-	-	129
New York, Up-State.	33	787	298	1	36	36	NN	-	-	-	40
New Jersey.*.....	51	321	309	1	71	61	46	-	-	-	38
Pennsylvania.....	32	128	465	9	62	29	NN	-	-	-	1
EAST NORTH CENTRAL...	135	2,481	3,119	2	131	111	1,210	-	-	-	272
Ohio.....	10	199	552	1	35	41	142	-	-	-	99
Indiana.*.....	24	396	375	-	18	14	129	-	-	-	11
Illinois.....	59	1,022	484	-	30	23	107	-	-	-	33
Michigan.....	11	157	641	1	36	24	334	-	-	-	57
Wisconsin.....	31	707	1,067	-	12	9	498	-	-	-	72
WEST NORTH CENTRAL...	24	251	1,764	4	55	44	576	-	-	-	103
Minnesota.....	-	7	84	1	15	9	19	-	-	-	4
Iowa.....	9	50	418	-	4	9	444	-	-	-	98
Missouri.....	1	64	129	1	11	11	1	-	-	-	1
North Dakota.....	14	91	642	-	2	-	92	-	-	-	-
South Dakota.....	-	4	45	-	4	6	NN	-	-	-	-
Nebraska.....	-	27	446	1	5	7	17	-	-	-	-
Kansas.....	-	8	NN	1	14	2	3	-	-	-	-
SOUTH ATLANTIC.....	95	979	4,601	5	273	199	319	-	-	-	371
Delaware.....	-	7	27	-	3	5	5	-	-	-	2
Maryland.....	6	57	81	1	17	25	48	-	-	-	5
Dist. of Columbia..	-	6	12	1	10	5	16	-	-	-	1
Virginia.....	28	189	1,417	-	19	16	54	-	-	-	54
West Virginia.....	9	158	854	-	6	16	72	-	-	-	58
North Carolina.....	34	254	746	1	58	41	NN	-	-	-	-
South Carolina.....	-	18	344	1	48	19	7	-	-	-	14
Georgia.....	-	3	23	1	48	33	-	-	-	-	-
Florida.....	18	287	1,097	-	64	39	117	-	-	-	237
EAST SOUTH CENTRAL...	29	343	3,918	2	102	95	126	-	-	-	141
Kentucky.....	2	100	1,065	-	40	29	18	-	-	-	52
Tennessee.....	1	46	1,344	2	32	39	89	-	-	-	56
Alabama.*.....	4	76	916	-	14	17	17	-	-	-	33
Mississippi.....	22	121	593	-	16	10	2	-	-	-	-
WEST SOUTH CENTRAL...	280	3,035	13,799	3	237	153	438	-	-	6	144
Arkansas.....	-	-	1,348	1	14	16	2	-	-	-	-
Louisiana.*.....	1	2	87	-	61	59	-	-	-	-	9
Oklahoma.....	-	100	3,256	-	44	10	2	-	-	-	-
Texas.....	279	2,933	9,108	2	118	68	434	-	-	6	135
MOUNTAIN.....	48	539	2,909	1	16	20	199	-	-	-	59
Montana.....	-	63	200	-	2	-	8	-	-	-	2
Idaho.....	-	11	310	-	3	1	7	-	-	-	1
Wyoming.....	-	42	20	-	-	-	-	-	-	-	-
Colorado.....	22	233	791	-	7	10	110	-	-	-	32
New Mexico.....	2	50	456	-	-	3	20	-	-	-	6
Arizona.....	11	119	645	-	1	2	42	-	-	-	16
Utah.....	13	16	243	-	-	2	2	-	-	-	2
Nevada.....	-	5	244	1	3	2	10	-	-	-	-
PACIFIC.....	94	1,624	7,892	8	161	199	881	-	-	8	298
Washington.....	30	411	3,781	1	26	20	274	-	-	-	74
Oregon.....	9	330	1,020	-	14	17	36	-	-	-	8
California.....	50	850	2,915	6	111	153	508	-	-	8	194
Alaska.....	-	-	96	-	-	8	7	-	-	-	1
Hawaii.....	5	33	80	1	10	1	56	-	-	-	21
Puerto Rico.....	27	236	1,366	-	15	8	40	-	-	-	15

*Delayed reports: Measles: N.J. 3, Ind. delete 41, Ala. delete 37, La. delete 2
Meningococcal infections: La. delete 1
Rubella: Me. 4, Ala. 37, La. delete 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
APRIL 27, 1968 AND APRIL 29, 1967 (17th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968
UNITED STATES...	9,050	1	35	2	22	3	78	2	8	69	1,270
NEW ENGLAND.....	1,287	1	1	-	-	-	2	-	-	5	51
Maine..*.....	30	-	-	-	-	-	-	-	-	4	48
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	2
Vermont.....	17	-	-	-	-	-	-	-	-	1	1
Massachusetts.....	198	-	-	-	-	-	1	-	-	-	-
Rhode Island.....	111	-	-	-	-	-	-	-	-	-	-
Connecticut.....	931	1	1	-	-	-	1	-	-	-	-
MIDDLE ATLANTIC.....	329	-	6	-	-	1	10	-	-	-	11
New York City.....	21	-	3	-	-	-	6	-	-	-	-
New York, Up-State.	224	-	3	-	-	-	1	-	-	-	7
New Jersey.....	NN	-	-	-	-	-	-	-	-	-	-
Pennsylvania.....	84	-	-	-	-	1	3	-	-	-	4
EAST NORTH CENTRAL...	727	-	3	-	4	-	10	-	-	2	85
Ohio.....	111	-	-	-	1	-	7	-	-	-	44
Indiana.....	137	-	-	-	-	-	1	-	-	-	19
Illinois.....	132	-	2	-	2	-	1	-	-	-	8
Michigan.....	202	-	1	-	1	-	-	-	-	2	6
Wisconsin.....	145	-	-	-	-	-	1	-	-	-	8
WEST NORTH CENTRAL...	334	-	2	-	5	-	4	-	-	25	293
Minnesota.....	29	-	-	-	-	-	-	-	-	11	78
Iowa.....	90	-	-	-	-	-	-	-	-	3	49
Missouri.....	19	-	2	-	3	-	3	-	-	6	52
North Dakota.....	109	-	-	-	-	-	-	-	-	2	53
South Dakota.....	32	-	-	-	1	-	1	-	-	-	34
Nebraska.....	11	-	-	-	-	-	-	-	-	2	13
Kansas.....	44	-	-	-	1	-	-	-	-	1	14
SOUTH ATLANTIC.....	1,272	-	7	-	4	-	20	2	7	5	146
Delaware.....	2	-	-	-	-	-	-	-	-	-	-
Maryland.....	246	-	-	-	-	-	4	-	-	-	2
Dist. of Columbia..	15	-	1	-	-	-	1	-	-	-	-
Virginia.....	387	-	2	-	1	-	3	1	5	-	71
West Virginia.....	188	-	-	-	-	-	-	-	-	2	20
North Carolina.....	16	-	2	-	2	-	2	1	2	-	4
South Carolina.....	73	-	-	-	-	-	-	-	-	-	-
Georgia.....	9	-	-	-	1	-	7	-	-	1	13
Florida.....	336	-	2	-	-	-	3	-	-	2	36
EAST SOUTH CENTRAL...	1,509	-	4	-	4	-	11	-	1	13	356
Kentucky.....	389	-	1	-	1	-	1	-	-	8	164
Tennessee.....	925	-	-	-	3	-	7	-	-	5	177
Alabama.....	86	-	1	-	-	-	-	-	-	-	15
Mississippi.....	109	-	2	-	-	-	3	-	1	-	-
WEST SOUTH CENTRAL...	579	-	5	2	3	1	8	-	-	10	232
Arkansas.....	8	-	-	1	1	1	1	-	-	-	27
Louisiana.....	11	-	4	-	-	-	1	-	-	-	25
Oklahoma.....	28	-	-	-	1	-	1	-	-	3	74
Texas.....	532	-	1	1	1	-	5	-	-	7	106
MOUNTAIN.....	1,790	-	-	-	2	-	6	-	-	1	21
Montana.....	53	-	-	-	-	-	-	-	-	-	-
Idaho.....	109	-	-	-	-	-	-	-	-	-	-
Wyoming..*.....	233	-	-	-	-	-	1	-	-	-	1
Colorado.....	1,081	-	-	-	1	-	2	-	-	-	1
New Mexico.....	180	-	-	-	-	-	3	-	-	1	11
Arizona.....	107	-	-	-	-	-	-	-	-	-	8
Utah.....	27	-	-	-	1	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	1,223	-	7	-	-	1	7	-	-	8	75
Washington.....	297	-	-	-	-	-	-	-	-	-	-
Oregon.....	195	-	-	-	-	1	1	-	-	-	-
California.....	593	-	7	-	-	-	6	-	-	8	75
Alaska.....	22	-	-	-	-	-	-	-	-	-	-
Hawaii.....	116	-	-	-	-	-	-	-	-	-	-
Puerto Rico.....	10	-	1	-	-	-	-	-	-	1	12

*Delayed reports: SST: Me. 21, Wyo. 84

Week No. 17

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED APRIL 27, 1968

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes		Pneumonia and Influenza	Under 1 year
	All Ages	65 years and over	All Ages	All Causes
NEW ENGLAND:	739	474	35	31
Boston, Mass.	268	158	23	15
Bridgeport, Conn.	49	31	4	4
Cambridge, Mass.	31	22	-	1
Fall River, Mass.	24	18	1	-
Hartford, Conn.	60	36	1	1
Lowell, Mass.	23	15	1	3
Lynn, Mass.	21	12	-	-
New Bedford, Mass.	32	23	1	1
New Haven, Conn.	41	31	-	1
Providence, R. I.	49	29	-	3
Somerville, Mass.	8	7	-	-
Springfield, Mass.	48	34	2	-
Waterbury, Conn.	30	22	-	1
Worcester, Mass.	55	36	2	1
MIDDLE ATLANTIC:	3,258	1,923	148	169
Albany, N. Y.	49	29	1	2
Allentown, Pa.	28	17	1	1
Buffalo, N. Y.	140	86	1	9
Camden, N. J.	43	19	-	4
Elizabeth, N. J.	35	18	-	2
Erie, Pa.	39	25	5	-
Jersey City, N. J.	70	41	6	3
Newark, N. J.	79	45	4	5
New York City, N. Y.	1,704	989	82	71
Paterson, N. J.	61	39	6	3
Philadelphia, Pa.	438	252	12	35
Pittsburgh, Pa.	177	104	6	11
Reading, Pa.	58	38	5	6
Rochester, N. Y.	98	64	2	10
Schenectady, N. Y.	23	18	-	-
Scranton, Pa.	40	25	3	-
Syracuse, N. Y.	77	48	6	4
Trenton, N. J.	45	24	3	2
Utica, N. Y.	28	22	2	-
Yonkers, N. Y.	26	20	3	1
EAST NORTH CENTRAL:	2,645	1,498	74	120
Akron, Ohio	67	28	-	4
Canton, Ohio	36	26	4	-
Chicago, Ill.	719	390	22	34
Cincinnati, Ohio	172	93	2	10
Cleveland, Ohio	187	96	1	4
Columbus, Ohio	153	81	5	7
Dayton, Ohio	89	55	-	4
Detroit, Mich.	378	231	9	15
Evansville, Ind.	44	28	-	2
Flint, Mich.	45	27	-	1
Fort Wayne, Ind.	51	36	4	2
Gary, Ind.	54	27	2	4
Grand Rapids, Mich.	66	46	4	4
Indianapolis, Ind.	154	75	2	13
Madison, Wis.	28	13	5	4
Milwaukee, Wis.	124	76	4	2
Peoria, Ill.	51	27	-	3
Rockford, Ill.	32	20	3	1
South Bend, Ind.	39	26	3	2
Toledo, Ohio	90	52	3	4
Youngstown, Ohio	66	45	1	-
WEST NORTH CENTRAL:	821	524	24	28
Des Moines, Iowa	59	42	2	4
Duluth, Minn.	27	12	2	-
Kansas City, Kans.	39	25	7	4
Kansas City, Mo.	127	85	1	3
Lincoln, Nebr.	17	15	1	-
Minneapolis, Minn.	123	81	2	2
Omaha, Nebr.	64	38	1	4
St. Louis, Mo.	245	150	5	6
St. Paul, Minn.	81	56	3	3
Wichita, Kans.	39	20	-	2
SOUTH ATLANTIC:	1,186	597	46	65
Atlanta, Ga.	157	66	4	9
Baltimore, Md.	248	113	6	13
Charlotte, N. C.	38	18	3	3
Jacksonville, Fla.	62	23	1	2
Miami, Fla.	95	57	2	4
Norfolk, Va.	67	33	6	5
Richmond, Va.	79	39	-	10
Savannah, Ga.	26	12	3	1
St. Petersburg, Fla.	86	67	4	2
Tampa, Fla.	76	43	6	2
Washington, D. C.	197	94	10	8
Wilmington, Del.	55	32	1	6
EAST SOUTH CENTRAL:	618	341	26	31
Birmingham, Ala.	92	58	1	4
Chattanooga, Tenn.	47	23	6	-
Knoxville, Tenn.	42	32	1	-
Louisville, Ky.	129	75	12	8
Memphis, Tenn.	117	59	3	7
Mobile, Ala.	42	22	3	3
Montgomery, Ala.	36	15	-	1
Nashville, Tenn.	113	57	-	8
WEST SOUTH CENTRAL:	1,084	563	39	57
Austin, Tex.	46	26	5	1
Baton Rouge, La.	21	14	2	-
Corpus Christi, Tex.	25	13	1	3
Dallas, Tex.	150	78	1	8
El Paso, Tex.	28	15	3	1
Fort Worth, Tex.	80	42	2	5
Houston, Tex.	201	102	6	6
Little Rock, Ark.	49	32	3	3
New Orleans, La.	158	75	3	11
Oklahoma City, Okla.	82	44	2	5
San Antonio, Tex.	101	47	4	11
Shreveport, La.	60	34	4	-
Tulsa, Okla.	83	41	3	3
MOUNTAIN:	442	251	15	20
Albuquerque, N. Mex.	49	20	3	4
Colorado Springs, Colo.	21	13	2	1
Denver, Colo.	118	70	4	1
Ogden, Utah	21	15	-	1
Phoenix, Ariz.	113	59	3	7
Pueblo, Colo.	18	13	1	1
Salt Lake City, Utah	44	21	-	4
Tucson, Ariz.	58	40	2	1
PACIFIC:	1,509	898	35	69
Berkeley, Calif.	18	11	-	-
Fresno, Calif.	46	21	1	4
Glendale, Calif.	23	13	-	-
Honolulu, Hawaii	47	21	-	8
Long Beach, Calif.	84	58	2	1
Los Angeles, Calif.	427	236	10	22
Oakland, Calif.	107	64	3	9
Pasadena, Calif.	33	30	-	-
Portland, Oreg.	127	74	1	3
Sacramento, Calif.	53	29	1	3
San Diego, Calif.	99	50	2	5
San Francisco, Calif.	162	98	2	1
San Jose, Calif.	44	34	3	2
Seattle, Wash.	138	91	6	4
Spokane, Wash.	59	42	2	4
Tacoma, Wash.	42	26	2	3
Total	12,302	7,069	442	590

Cumulative Totals
including reported corrections for previous weeks

All Causes, All Ages	229,385
All Causes, Age 65 and over	135,326
Pneumonia and Influenza, All Ages	11,191
All Causes, Under 1 Year of Age	10,125

ADDENDUM, Vol. 17, No. 16, p. 140

The following editorial note should be added to the article "Foodborne Disease Outbreaks – 1966 and 1967:

Editoriol Note

A list of the 273 outbreaks from which these data were derived is available on request from: Chief, Enteric Diseases Unit, Bacterial Diseases Section, Epidemiology Program, NCDC.

ERRATUM, Vol. 17, No. 16, p. 141.

In the article "Follow-up Malaria – Ceylon," the third sentence in the second paragraph is incomplete. It should read: "No secondary cases were discovered despite prompt widespread investigation and follow-up which included five serial mass blood surveys in which 1,815 blood films were taken.

THE MORBIOITY ANO MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 17,000, IS PUBLISHEO AT THE NATIONAL COMMUNICABLE OISEASE CENTER, ATLANTA, GEORGIA.

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IN AOOITION TO THE ESTABLISHEO PROCEOURES FOR REPORTING MORBIOITY ANO MORTALITY, THE NATIONAL COMMUNICABLE OISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS ANO WHICH ARE OIRECTLY RELATEO TO THE CONTROL OF COMMUNICABLE OISEASES. SUCH COMMUNICATIONS SHOULO BE AOORESSEO TO:

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ATLANTA, GEORGIA 30333
ATTN: THE EOITOR
MORBIOITY ANO MORTALITY WEEKLY REPORT

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL ANO ARE BASEO ON WEEKLY TELEGRAMS TO THE NCOC BY THE INOIVIOUAL STATE HEALTH OEPARTMENTS. THE REPORTING WEEK CONCLUOES ON SATUROAY; COMPILEO OATA ON A NATIONAL BASIS ARE RELEASEO ON THE SUCCEEOING FRIOAY

U.S. DEPARTMENT OF
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PUBLIC HEALTH SERVICE
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